

Work Order ID 69625

Thursday, May 12, 2011 3:17:58 PM



Page 1

Item ID: D3688-3

Accept



Setup Start



Revision ID:

Stop



Item Name: STUD

Start Date: 5/12/2011 Start Qty: 4.00



Cust Item ID:

Required Date: 5/16/2011 Req'd Qty: 4.00



Customer:

Reference:

Approvals:

Process Plan:

RP

Date:

11-05-12

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start



Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D3688

Rev B

check dwg

100



Bandsaw

Jeaspa Bandsaw

BAND SAW

Memo

DO NOT USE CHOP SAW

0.00

0.00

☐ Cut blank 9.424" long

29 11.7.6

4

110



Doosan

Doosan Lathe

DOOSAN LATHE

Memo

1-Turn as per Folio FA717 Rev: *U/A* & Dwg D3688 Rev: *C* ☐ 2-Deburr
per dwg D3688
3-Check .625" bore with DT9530 GO/NO GO Gauge

0.00

0.00

5/14/15

4

120



QC

Quality Control

QC2- Inspect parts off machine FAI/FAIB

Memo

0.00

0.00

5/11/7/15

4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Page 2

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Cust Item ID:

Required Date: 5/16/2011 Req'd Qty: 4.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

170

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

29 11-7-7

4

Quality Control

100% CHECK,CHECK ALL DIMENSIONS AND THREAD FIT

180

PURCHASING

0.00



Purchasing

Memo

0.00

C21110714 (4)

Purchasing

Issue P/O: 14448 ☐ LPI Per ASTM 1417 LEVEL
2 ☐ Certificate of conformaty is required

190

Receive & Inspect for Damage & Mat'l Certs

0.00



Packaging

Memo

0.00

1447/01 (4)

Packaging

Ensure certificate of conformity is attached

W/O:		WORK ORDER CHANGES					
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Page 3

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Stop



Item Name: STUD

Start Date: 5/12/2011 Start Qty: 4.00



Cust Item ID:

Required Date: 5/16/2011 Req'd Qty: 4.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

200

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

11 07 11 4

210

Identify as per dwg & Stock Location *SMAL Fab* 0.00

Packaging

Memo

0.00

Packaging

11/7/12

220

QC21- Final Inspection - Work Order Release 0.00



QC

Memo

0.00

Quality Control

11/7/12

MF

11-07-12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Thursday, May 12, 2011 3:18:04 PM

Page 1

Work Order ID: 69625

Parent Item: D3688-3

Parent Item Name: STUD



Start Date: 5/12/2011

Required Date: 5/16/2011

Start Qty: 4.00

Required Qty: 4.00

Comments: Rev:A New Issue 08-01-29 JLM Verified By:EC
IPP Rev:B Material Change 09-01-07 JLM Verified By:EC
IPP Rev:C Added note on Step 2 09-01-26 JLM Verified By:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M174PH-H900R1.000		Purchased	No			100	f	36.0000	0.788	3.317895			
17-4SS H900 ROUND BAR 1.00													

Location

MAT030

117445

Loc Qty

36

36

Loc Code

29 11.7.6

3.3 ft

W/O:		WORK ORDER CHANGES					
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NOTE: Date & initial all entries

98

DART AEROSPACE LTD		Work Order: 09625
Description: Stud		Part Number: D3688-3
Inspection Dwg: D3688	Rev: C	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.695	+/-0.010	0.695	/		SA-P	
0.625	+0.004/-0.000	0.627	/			
1.25	+0.000/-0.03	1.230	/			
118°	0.5°	118°	/			
R0.03	+/-0.030	1.03	/			
0.11 (Ref)	+/-0.030	11	/			
90°	0.5°	90°	/			
Ø0.189	+0.005/-0.001	0.190	/			
1.31	+/-0.030	1.31	/			
1.65	+/-0.030	1.65	/			
0.870	+0.000/-0.010	0.865	/			
Ø0.659	+0.000/-0.015	0.652	/		SA-S	
9.324	+/-0.015	9.330	/			
2.90	+/-0.030	2.910	/			
3/4-16UNF-2A	N/A		/			
0.075 x 45°	+/-0.010 x 0.5°	0.075 x 45°	/			
0.370	+0.000/-0.010	0.365	/			
Ø0.189	+0.005/-0.001	0.190	/			
R0.25	+/-0.030	1.25	/			
R0.50	+/-0.030	1.50	/			

Measured by: SA	Audited by: DP	Prototype Approval:	N/A
Date: 11/7/5	Date: 11.7.7	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	09.05.11	New Issue	KJ	
B	09.11.04	Dwg Rev updated	KJ	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

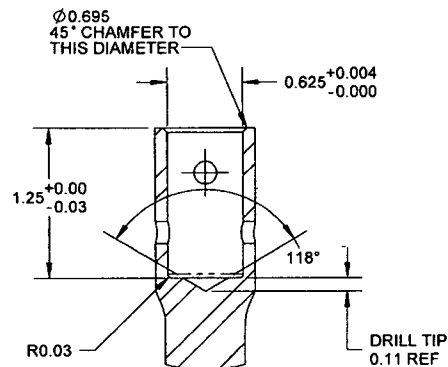
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

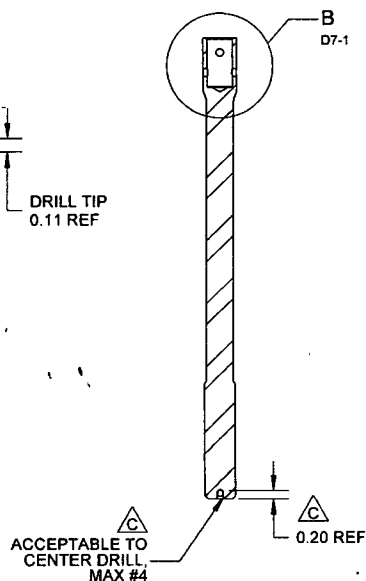
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

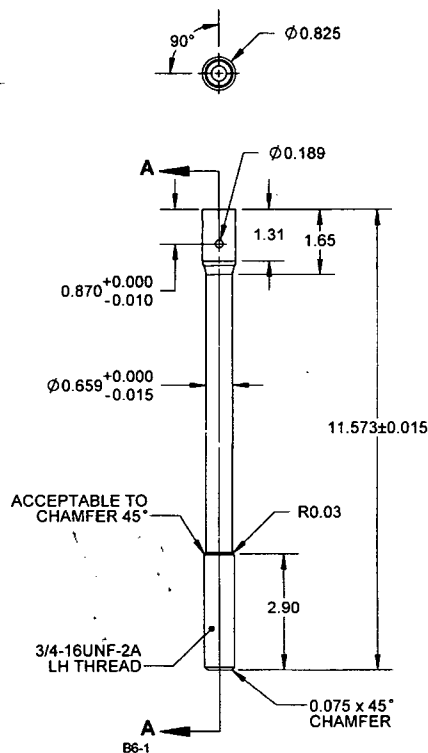
SHOP COPY
RETURN TO
ENGINEERING 5
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 09625



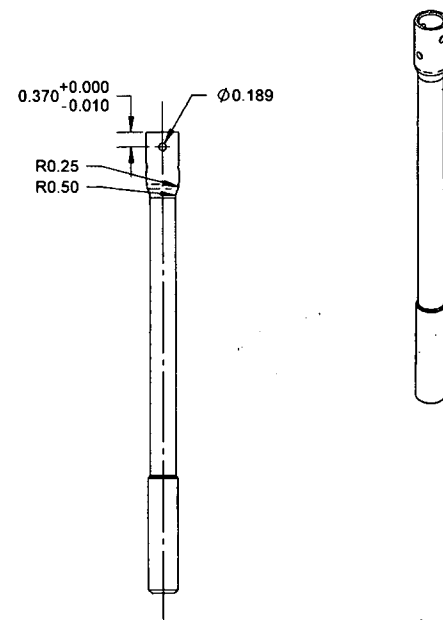
DETAIL B
SCALE 3X
D6-1



SECTION A-A
D4-1



D3688-1 STUD



RELEASED
2009-09-22

NOTES:

- 1) MATERIAL: 17-4PH STAINLESS STEEL ROUND BAR PER AMS 5643 H-900 CONDITION
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 1.24 lb
- 8) LPI PER QSI 038 4.1.1 (ASTM E1417 LEVEL 2)

C	0.20 WAS 0.16 (ZN B5-1, B5-2, B6-3, B5-4); CENTER DRILL #4 WAS CENTER DRILL #2 (ZN B6-1, B6-2, B5-3, B6-4); UPDATE NOTE 8 TO REF QSI (ZN A8-1, A8-2, A8-3, A8-4)	RF	09.09.09
B	CHANGE TO 17-4PH H-900 (ZN A8-1, A8-2, A8-3, A4-4); REDUCE LENGTH ON D3688-1 FROM 12.073 TO 11.573 (ZN C3-1) BASED ON PROTOTYPE INSTALL; 0.695 WAS 0.665 (ZN D8-1, D8-2, D8-3); 0.508 WAS 0.478 (ZN D8-4); REFORMATTED TO CURRENT DWG STANDARDS	RF	08.11.24
A	NEW ISSUE	RF	08.05.22
REV.	DESCRIPTION	BY	DATE
DESIGN	RF		
DRAWN	RF		
CHECKED	GP		
MFG. APPR.	GP		
APPROVED	GP		
DE APPR.	GP		
DATE	09.09.09		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. D3688 STUD SHEET 1 OF 4 SCALE NTS COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD			

W/O:		WORK ORDER CHANGES					
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



RELEASE
2009-09-22

- NOTES:**
1) MATERIAL: 17-4PH STAINLESS STEEL ROUND BAR PER AMS 5643 H-900 CONDITION
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.97 lb
8) LPI PER QSI 038 4.1.1 (ASTM E1417 LEVEL 2)

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>90</i>	DRAWING NO.	REV. C
MFG. APPR.	<i>21</i>	D3688	SHEET 2 OF 4
APPROVED	<i>10</i>	TITLE	SCALE
DE APPR.	<i>10</i>	STUD	NTS
DATE	09.09.09	COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED TO ANY OTHER PERSON WITHOUT	

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8

7

6

5

4

3

2

1

D

C

B

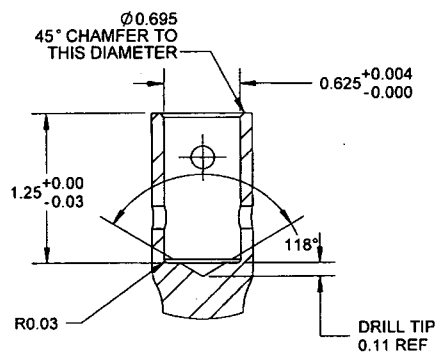
A

D

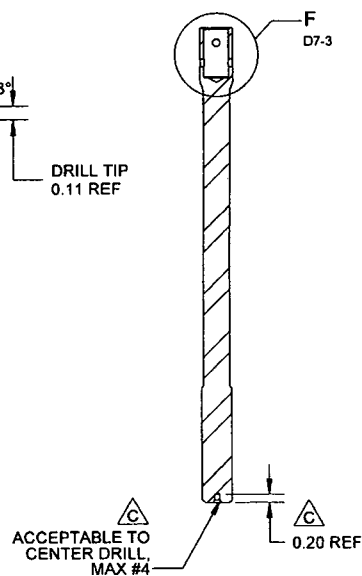
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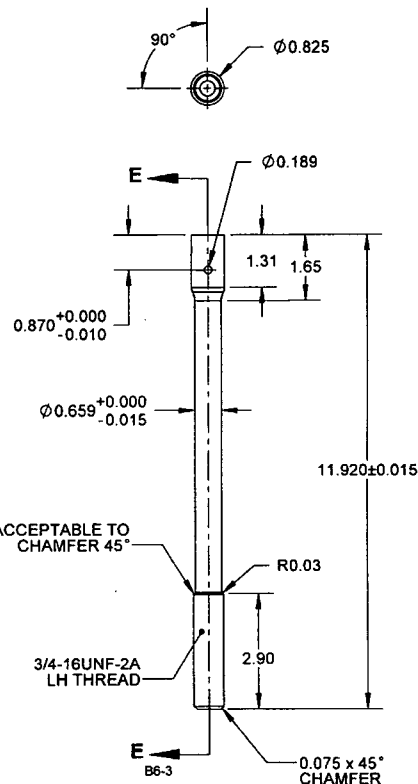
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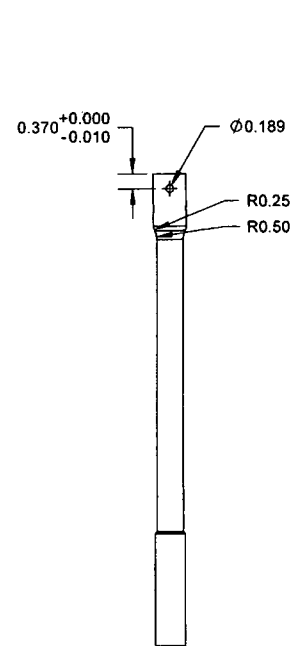
DETAIL F
SCALE 3X
D6-3



SECTION E-E
D4-3



D3688-5 STUD



w/o 69625

RELEASED
2009-08-22

NOTES:

- 1) MATERIAL: 17-4PH STAINLESS STEEL ROUND BAR PER AMS 5643 H-900 CONDITION
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 1.26 lb
- 8) LPI PER QSI 038 4.1.1 (ASTM E1417 LEVEL 2)



DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>97</i>	DRAWING NO. D3688	REV. C SHEET 3 OF 4
MFG. APPR.	<i>97</i>	TITLE STUD	SCALE NTS
APPROVED	<i>97</i>	<small>COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	
DE APPR.	<i>97</i>		
DATE	09.09.09		

8

7

6

5

4

3

2

1

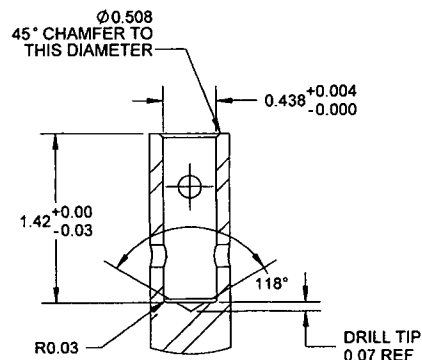
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

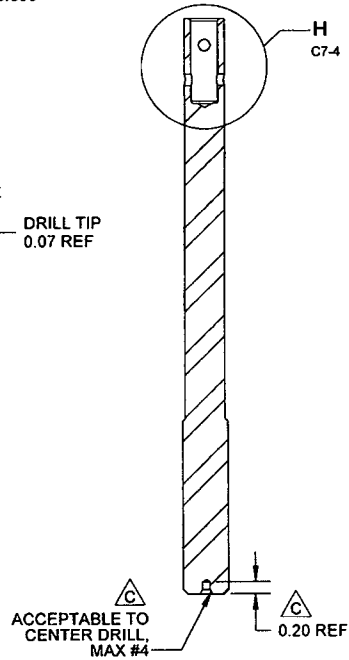
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries



DETAIL H
SCALE 2X
D6-4



SECTION G-G
D4-4

D3688-7 STUD

- NOTES:**
- 1) MATERIAL: 17-4PH STAINLESS STEEL ROUND BAR PER AMS 5643 H-900 CONDITION
 - 2) FINISH: NONE
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 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 0.97 lb
 - 8) LPI PER QSI 038 4.1.1 (ASTM E1417 LEVEL 2)

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	GP	DRAWING NO.	REV. C
MFG. APPR.	GP	D3688	SHEET 4 OF 4
APPROVED	GP	TITLE	SCALE
DE APPR.	GP	STUD	NTS
DATE	09.09.09	<small>COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

u69625

RELEASED
2009-09-22

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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ACUREN

LIQUID PENETRANT TEST REPORT

P- 05622

PAGE 1 OF 1

TIME AM ☒ PM ☐

CLIENT

ATTENTION

ADDRESS

PROJECT

ITEM(S) EXAMINED

DATE

ACUREN JOB No.

PO/NO No.

WORK LOCATION

ACCEPTANCE STD.

REV./DATE

JOB DESCRIPTION

PROCEDURE No. LT-000

REV./DATE

TECHNIQUE No. LT-000

REV./DATE

ART No.

MATERIAL

THICKNESS

SCOPE

TEST DETAILS

METHOD

☒ FLUORESCENT☐ VISIBLE☒ WATER WASH☐ SOLVENT REMOVABLE☐ POST EMULSIFIED

FAMILY BRAND

BLACK LIGHT S/N

☐ OUTPUT > 1000 μ W/cm²

AT AMBIENT < 2 fc

ENETRANT

MINIMUM DWELL TIME

10

MIN.

LIGHTING EQUIP.

☐ FLASHLIGHT☐ TROUBLELIGHT☐ OUTPUT > 100 fc @ SURFACE

ENETRANT REMOVER

MINIMUM DRY TIME

>10

MIN.

OTHER

DEVELOPER

MINIMUM DWELL TIME

10

MIN.

LIGHT METER S/N

CAL DUE DATE

DEVELOPER TYPE

☒ NON AQUEOUS☐ AQUEOUS☐ DRY

TEST SURFACE

SURFACE CONDITION

☐ AS GROUND☐ AS WELDED☐ MACHINED☐ SHOT BLASTED☒ CLEAN BARE METAL

SURFACE TEMPERATURE

☐ < -4°C/ 20°F☐ -4°C/ 20°F TO 10°C/50°F☒ 10°C/50°F TO 52°C/125°F☐ > 52°C/125°F

RESULTS-

☐ METRIC ☐ IMPERIAL

1	STUDS (4)	W.O.I.D 69605	✓	ITEM ID	D3688-3	
2	CROSSSTUBE	W.O.I.D 200667	20786	ITEM ID	69971	AFT
3	CROSSSTUBE	W.O.I.D 69970	✓	ITEM ID	2006-667-207 BL	AFT
4	"	W.O.I.D 69965	✓	ITEM ID	2006-667-107 BL	FWD
5	"	W.O.I.D 71044	✓	ITEM ID	2006-667-203 BL	AFT
6	"	W.O.I.D 71045	✓	ITEM ID	2006-667-203 BL	AFT
7	"	W.O.I.D 71042	✓	ITEM ID	2006-667-103 BL	FWD
8	"	W.O.I.D 69964	✓	ITEM ID	2006-667-107 BL	FWD

NO RELEVANT INDICATION WAS DETECTED
AS PER APPLICABLE STANDARDS.

11-07-11

Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care

When performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES

CLIENT REPRESENTATIVE

TECHNICIAN (SIGNATURE):

NAME (PRINT):

DTR # E44696

REPORT
REVIEWED BY:

NAME

INITIALS

CGSB LEVEL

2

SNT LEVEL

2

CGSB LEVEL

SNT LEVEL

CGSB REG. No

3049

CGSB REG. No

WHITE - CLIENT COPY

CANARY - OFFICE COPY

PINK - TECHNICIAN COPY

GOLD - OFFICE COPY